

Title (en)

CO-CURRENT FIXED BED GASIFIER FOR PRODUCING A PRODUCT GAS FROM BIOMASS PARTICULATES

Title (de)

GLEICHSTROM-FESTBETTVERGASER ZUM ERZEUGEN EINES PRODUKTGASES AUS SCHÜTTBAREN BIOMASSETEILCHEN

Title (fr)

GAZÉIFICATEUR À CO-COURANT AU LIT FIXÉ POUR PRODUIRE DU GAZ À PARTIR DES PARTICULES DE BIOMASSE

Publication

**EP 3230412 A1 20171018 (DE)**

Application

**EP 15808371 A 20151207**

Priority

- DE 102014225166 A 20141208
- EP 2015078888 W 20151207

Abstract (en)

[origin: WO2016091835A1] The invention relates to a downdraft fixed-bed gasifier for generating a product gas from pourable biomass particles, to a method for operating such a downdraft fixed-bed gasifier, to a method for starting such a downdraft fixed-bed gasifier, and to a method for shutting down such a downdraft fixed-bed gasifier. By supplying air through the bed of biomass particles in the tubular gasifier component, a uniform distribution of the air is produced. Hardly any temperature differences occur in the oxidation zone by virtue of the uniform distribution. As a result, even pyrolysis gases produced over the oxidation zone flow through the oxidation zone in a uniform manner. The uniformity of the gas and the air flows allows a product gas to be generated with low tar quantities. The oxidation zone is locally connected by means of a cross-sectional jump between the gasifier component and the gasifier container at the open end of the gasifier component, different flow speeds resulting from said cross-sectional jump. By expanding the cross-section, the flow speed is slowed compared to conventional fixed-bed gasifiers. The different flow speeds within and outside the tubular gasifier component virtually fix the oxidation zone in front of the open end of the tubular gasifier component. Another advantage of the expanded cross-section is that the pyrolysis gases are not delimited by a tube wall while flowing through the oxidation zone. The flow conditions on tube walls are not uniform, and thus the temperatures there are not uniformly high. When pyrolysis gas flows on the edge of a tube wall through the oxidation zone, as is the case in the prior art, the long-chain hydrocarbons are not completely broken down. Additional long-chain hydrocarbon compounds are broken down by virtue of the absence of the tube wall, thus leading to an improvement of the motor efficiency when using the product gas.

IPC 8 full level

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CPC (source: EA EP US)

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Citation (search report)

See references of WO 2016091835A1

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